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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,734	12/20/2001	Qilian Liang	PD-201200	9767

7590 04/15/2005

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Patent Docket Administration
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EXAMINER

BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,734

Applicant(s)

LIANG, QILIAN

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith U.S. Patent No 6,466,614 B1.

As per claims 1, 13 and 25 Smith teaches a demodulator (see col.2, line 6) with communications link adaptation for use in a communications channel, comprising: said demodulator configured to receive a modulated signal over the communications channel (see figs.4, 10-12 and col.1, lines 64-col.2, lines 8 and col.12, line 63-67); said demodulator configured to notch out is the same as the claimed (to extract) (see col.8, lines 59-67) clusters from said modulated signal based on an unsupervised clustering technique; said demodulator configured to compute a mean and standard deviation for each extracted cluster (see col.3, lines 17-20, 60-67 and col.6, lines 15-25 and col.7, lines 40-67); said demodulator configured clustering classifier to classify is the same as the claimed (determine categories) (see abstract and col.2, lines 10- 25, 58-55 and col.9, lines 12-15 and col.10, line 53-fcol.13, line 15) for each extracted cluster based on a training sequence included in said modulated signal; and said demodulator

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configured to demodulate said modulated signal based on said mean, said standard deviation and said determined categories (see col.2, line 6 and col.9, lines 12-15 and col.10, line 53-fcol.13, line 15).

As per claims 2 and 14, Smith inherently teaches wherein said demodulator is configured to demodulate said modulated signal using a Bayesian demodulation technique.

As per claims 3, and 15, Smith inherently teaches wherein said unsupervised clustering technique comprises a Fuzzy c-Means (FCM) clustering technique.

As per claims 4 and 16, Smith inherently teaches wherein said modulated signal comprises a Quadrature Phase Shift Keying (QPSK) modulated signal (see col.2, line 2).

As per claims 5 and 17, Smith inherently teaches wherein said categories comprise $+1$, $+j$, -1 and $-j$.

As per claims 6 and 18, Smith inherently teaches wherein said demodulator is configured to assign an extracted cluster to said category $+1$ and remaining extracted clusters to categories $+j$, -1 and $-j$ in a counterclockwise order from said cluster assigned to said category 1.

As per claims 7 and 19, Smith inherently teaches wherein said demodulator is configured to generate hard decisions as said demodulation is used downstream for at least one of burst extraction and payload extraction.

As per claims 8 and 20, Smith inherently teaches wherein said communications channel comprises a satellite communications channel.

As per claims 9 and 21, Smith inherently teaches wherein said satellite communications channel comprises a satellite downlink communications channel.

As per claims 10 and 22, Smith a Quadrature Phase Shift Keying (QPSK) communications channel, an M-ary Phase-Shift Keying (M-PSK) communications channel, a Quadrature Amplitude Modulation (QAM) communications channel, a Pulse Amplitude Modulation (PAM) communications channel (see col.2, line 2). Furthermore wherein said communications channel comprises one of a digital video broadcasting (DVB) communications channel, a terrestrial broadcast communications channel, a cellular communications channel is inherently taught by Smith.

As per claims 11 and 23, Smith inherently teaches wherein said demodulator is included in a device comprising one of a personal digital assistant (PDA), a personal information assistant (PIA), a personal computer (PC), a laptop PC, a television, an Internet appliance, a cellular phone and a set-top box.

As per claim 12, Smith inherently teaches A communications system configured to include said demodulator recited in any one of claims 1-11.

As per claim 24, Smith inherently teaches computer-readable medium carrying one or more sequences of one or more instructions for a demodulation method with communications link adaptation, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps recited in any one of claims 13-23.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lee et al U.S. PUB 2003/0039321 A1 teaches a method and apparatus for providing Higher order modulation.

El-Ghiroury et al U.S. Patent No 5,867,400 teaches an application specific processor.

Komara et al U.S. Patent No 6,690,662 B1 teaches a method and apparatus employing wireless in-band.

McKissock U.S. Patent No 4,825,449 teaches an analysis of digital radio.

Salinger U.S. patent No 6,304,594 B1 teaches interference detection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM)
Alternate Friday off.

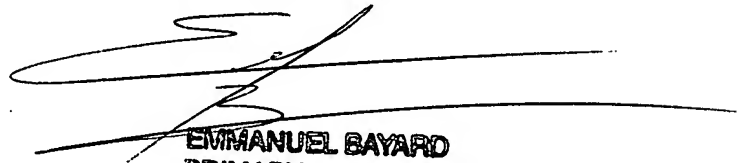
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571 272 3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/4/05

Emmanuel Bayard
Primary Examiner
Art Unit 2631



EMMANUEL BAYARD
PRIMARY EXAMINER